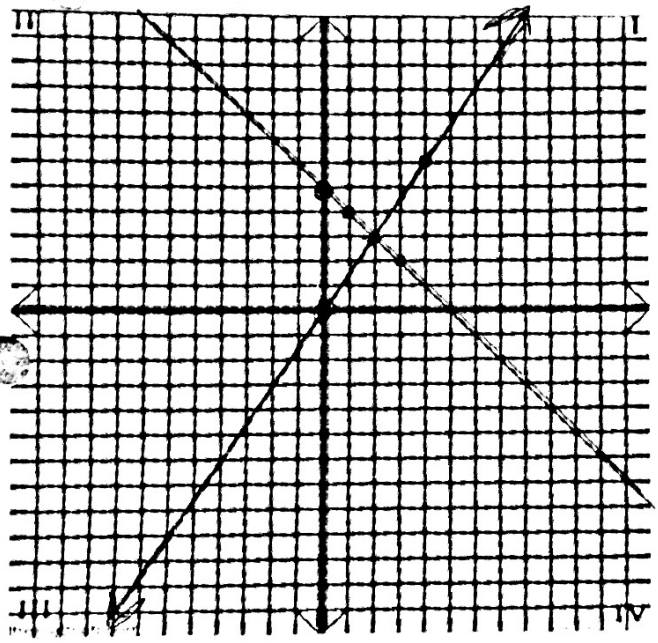
name Answers Date ___ Per ___ REI.6

Alg. 1 – Systems of Eqs TEST

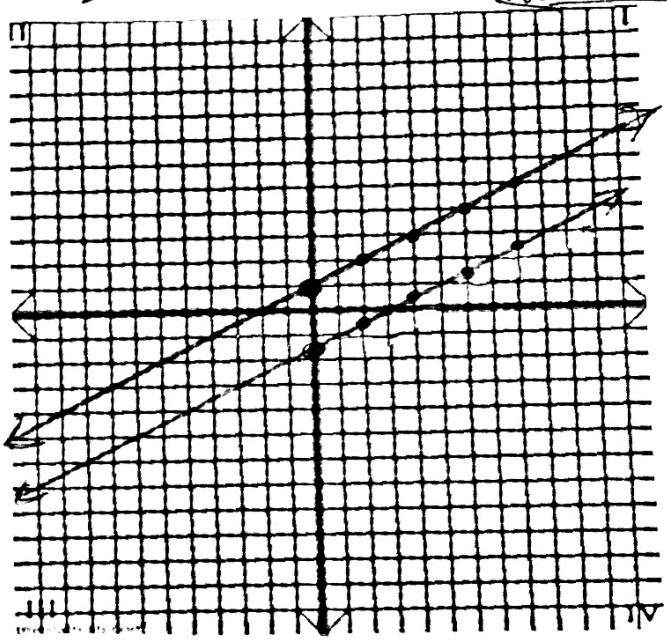
self rate
1 2 3 4

Solve by graphing. How many solutions & name it

1. $y = \frac{3}{2}x$
$y = -x + 5$
(2, 3)

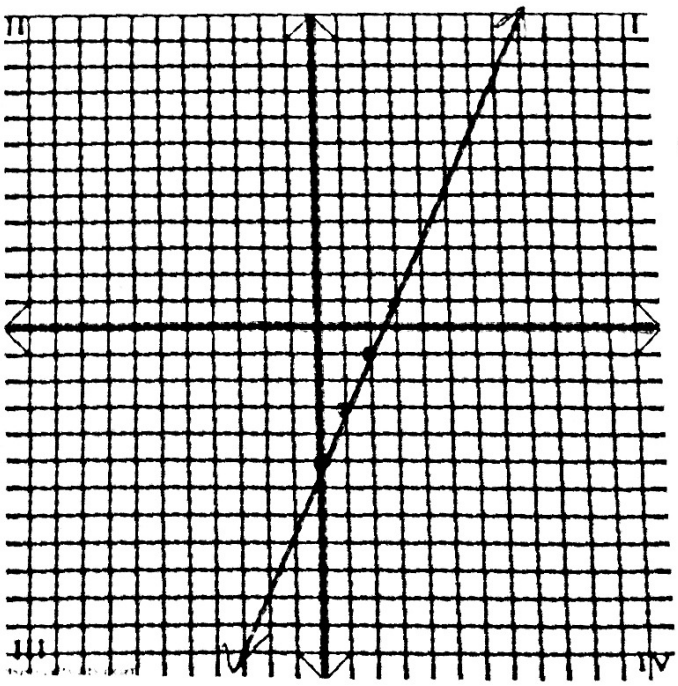


2. $x - 2y = -2$
$-x \quad -x$
$\frac{-2y}{-2} = \frac{-x}{-2} \frac{-2}{-2}$
$y = \frac{1}{2}x + 1$
$y = \frac{1}{2}x - \frac{3}{2}$
no solution



3. $2x - y = 5$
$-2x \quad -2x$
$\frac{-y}{-1} = \frac{-2x + 5}{-1} \frac{}{-1}$
$y = 2x - 5$

$4x - 2y = 10$
$-4x \quad -4x$
$\frac{-2y}{-2} = \frac{-4x + 10}{-2} \frac{}{-2}$
$y = 2x - 5$



∞ many

solve by substitution.

4. $3x - 2y = -7$
$y = x + 4$

$3x - 2(x+4) = -7$
$3x - 2x - 8 = -7$
$x - 8 = -7$
$x = 1$

$y = 1 + 4$
$y = 5$

$\boxed{(1,5)}$

5. $y = -3x + 2$
$y = 2x$

$-3x + 2 = 2x$
$+3x \quad +3x$
$\frac{2}{5} = \frac{5x}{5}$
$x = \frac{2}{5}$

$y = 2(\frac{2}{5})$
$y = \frac{4}{5}$

$\boxed{(\frac{2}{5}, \frac{4}{5})}$

6. $-3m + n = -11$
$+3m \quad +3m$
$n = 3m - 11$

$2m + 3n = 0$
$2m + 3(3m - 11) = 0$
$2m + 9m - 33 = 0$
$11m - 33 = 0$
$+33 \quad +33$
$\frac{11m}{11} = \frac{33}{11}$
$m = 3$

$-3(3) + n = -11$
$-9 + n = -11$
$+9 \quad +9$
$n = -2$

$\boxed{(3, -2)}$

Solve by elimination. Choose a method.

7. $2x + 2y = 10$
$-2x + 3y = -5$

$\frac{5y}{5} = \frac{5}{5}$
$y = 1$

$2x + 2(1) = 10$
$2x + 2 = 10$
$-2 \quad -2$
$\frac{2x}{2} = \frac{8}{2}$
$x = 4$

$\boxed{(4,1)}$

$6x + 4y = 22$

$4(2x - y = 1)$

$6x + 4y = 22$

$+ 8x - 4y = 4$

$\frac{14x}{14} = \frac{26}{14}$

$x = \frac{13}{7}$

$2(\frac{13}{7}) - y = 1$

$\frac{26}{7} - y = 1$

$-1 \quad -1$

$-y = \frac{19}{7}$

$y = -\frac{19}{7}$

$\boxed{(\frac{13}{7}, -\frac{19}{7})}$

$3(2x + 5y = 7)$

$-2(3x + 6y = 3)$

$6x + 15y = 21$

$-6x - 12y = -6$

$\frac{3y}{3} = \frac{15}{3}$

$y = 5$

$2x + 5(5) = 7$

$2x + 25 = 7$

$-25 \quad -25$

$\frac{2x}{2} = \frac{-18}{2}$

$x = -9$

$\boxed{(-9, 5)}$

10. $x - y = 5$

$x + y = 3$

$\frac{2x}{2} = \frac{8}{2}$

$x = 4$

$x + y = 3$

$4 + y = 3$

$-4 \quad -4$

$y = -1$

$\boxed{(4, -1)}$

Extra credit

Using any method (graphing, substitution, elimination), set up a system of equations to find two numbers whose sum is 26 and whose difference is 12.

x = first #

y = 2nd #

$x + y = 26$

$x - y = 12$

$\frac{2x}{2} = \frac{38}{2}$

$x = 19$

$x + y = 26$

$19 + y = 26$

$-19 \quad -19$

$y = 7$

The numbers are 19 & 7